ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

Project Name:

Date Submitted: Click here to enter a date.

Date Reviewed: Click here to enter a date.

Review Outcome

☐	Accepted (The project has met all of the requirements for earning the ENERGY STAR for MFHR)*
☐	Not Accepted (Must Correct and Resubmit) – See Notes Section

* All units in Multifamily High Rise Buildings that earn the ENERGY STAR must follow the ENERGY STAR MFHR Logo Identity guidelines when applying the certification mark for promotional materials. The logo guidelines can be found at www.energystar.gov/brandbook

ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

ENERGY STAR MFHR Submittal Validation Form

☐ **Performance Path**	☐ **Prescriptive Path**
☐ **ENERGY STAR MFHR Validation Form**	☐ **ENERGY STAR MFHR Validation Form**
☐ **As-Built Performance Path Calculator**	☐ **As-Built Performance Path Calculator**
☐ **Testing and Verification Worksheets**	☐ **Testing and Verification Worksheets**
☐ **Photo Template** ☐ **No Photo Template Req**	☐ **Photo Template** ☐ **No Photo Template Req**
☐ **Statement of Energy Design Intent on file**	☐ **Statement of Energy Design Intent on file**
☐ **Proposed Design Review responses**	☐ **Proposed Design Review responses**

	Y	N	N/A
1. The ENERGY STAR MFHR Validation Form includes the stamp and signature of the Licensed Professional, which are consistent with the name listed on the form and in the tracker.			
2. The SEDI was submitted with the As-Built Submittal			
3. The performance target matches the Proposed Design Submittal			

- ENERGY STAR MFHR Validation Form Approved? ☐ Yes ☐ No
- What is the project performance target on Submittal Validation Form? Choose an item. above Choose an item.

Actions: **Complete**

- File copy of validation form in partner's file ☐

Notes

Reviewed by: Choose an item. Date: Click here to enter a date.

As-Built Performance Path Calculator–Performance Path

	Y	N	N/A	Comments in Excel
1. As-Built Reporting Summary has the same energy conservation measures as reported in the Proposed Design Submittal	X[1]			
2. Do the energy conservation measures that differ from the Proposed Design Submittal still meet the ENERGY STAR MFHR Prerequisites?				
3. Energy Model has been updated to reflect any energy conservation measures that differ from those reported in the Proposed Design Submittal				
4. Values in Table 6 and 8 have not changed significantly since the Proposed Design				
5. The building information on the SEDI is consistent with the information provided in the Reporting Summary (if SEDI submitted with ABS)				
Basic Info	**Y**	**N**	**N/A**	**Comments in Excel**
6. Data is complete in all blue cells				
7. Lighting use & savings are within 5% of values in Table 6 of the Reporting Summary				

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As-Built Performance Path Calculator–Performance Path				
Reporting Summary	**Y**	**N**	**N/A**	**Comments in Excel**
8. Data is complete in all blue cells				
9. **[Table 1]** Project address is consistent with address on the Project Application				
10. **[Table 2]** Software used is ASHRAE 90.1 Appendix G compliant				
11. **[Table 2]** Baseline selected is appropriate based on application date and state code				
12. **[Table 2]** Weather file matches project location				
13. **[Table 3]** Number of stories, units and square footage matches Project Application				
14. **[Table 3]** Fuel match those listed in Table 6				
15. **[Table 3]** Commercial square footage is listed and energy use included in the model				
16. **[Table 5]** Baseline envelope matches Table 5.5 of the applicable ASHRAE 90.1 Standard (New Construction Only)				
17. **[Table 5]** Baseline envelope matches existing construction (Gut Rehab Only)				
18. **[Table 5]** Proposed envelope assembly U-values are consistent with ASHRAE 90.1 Appendix A and values reported in the T&V Worksheets				
19. **[Table 5]** Window to Wall Area is 40% or less in the Baseline				
20. **[Table 5]** Baseline window U-value is based on Proposed wall, rather than window				
21. **[Table 5]** Baseline HVAC system consistent with building heating fuel				
22. **[Table 5]** Ventilation systems are described and modeled per Simulation Guidelines				
23. **[Table 5]** Savings associated with renewable systems are not used to achieve the Performance Target				
24. **[Table 5]** Baseline components meet requirements of the Simulation Guidelines				
25. **[Table 5]** As Built components meet requirements of the Simulation Guidelines, including modeling garage heating systems as a penalty				
26. **[Table 6]** End use electrical loads are within accepted limits				
27. **[Table 6]** End use gas/oil loads are within acceptable limits				
28. **[Table 6]** Total electric load savings are consistent with As-Built Building				
29. [Table 6] Total gas/oil load savings are consistent with As-Built Building				
30. [Table 6] End-use savings that contribute more than 3% toward the Performance Target are justified by the As-Built Building				
31. [Table 7] Cost of fuels are consistent with Energy Information Administration state average				
32. [Table 8] Costs are calculated using the rates in Table 7				
33. [Table 8] Baseline BTUs for each end use is consistent with Table 6				
34. [Table 8] As-Built BTUs for each end use is consistent with Table 6				
Windows eQUEST, Water Savings, DHW Demand, Appliances	**Y**	**N**	**N/A**	**Comments in Excel**

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As-Built Performance Path Calculator–Performance Path				
35. Data is complete in all blue cells				
36. Data is consistent with the Simulation Guidelines and Appendix G				
37. Data is consistent with values in the T&V Worksheets & Photo Template				
38. Appliance end-use is within 5% of values in Table 6 of the Reporting Summary				
39. Plug Loads are within 5% of values in Table 6 of the Reporting Summary				
In-Unit Lighting, Interior Lighting, Exterior Lighting	**Y**	**N**	**N/A**	**Comments in Excel**
40. Data is consistent with values in the T&V Worksheets & Photo Template				
41. In-Unit Lighting: the number of fixtures and rooms is consistent with Basic Info				
42. In-Unit Lighting: instructions have been followed related to lit area and footcandles				
43. Interior Lighting: measurements provided if insufficient footcandles reported				
44. Interior Lighting: all non 24/7 spaces indicate automatic lighting controls				
45. Interior Lighting: if default lumens per watt are not used, cut sheet is provided				
46. Interior Lighting: ballast power has been added for pin-type fixtures				
47. Interior and Exterior Lighting: the correct Baseline has been selected				
48. Exterior Lighting: fixture description provided and formulas used for installed Watts				
49. Exterior Lighting: Baseline allowance only calculated for spaces with installed lights				
Statement of Energy Design Intent (if re-submitted)	**Y**	**N**	**N/A**	**Comments in Excel**
50. The SEDI is properly filled out (e.g., includes correct property uses)				
51. The building information on the SEDI is consistent with the information provided in the Reporting Summary				

- What is the Baseline Code for this project?	Choose an item.
- Does the As-Built Building meet the Performance Target of Choose an item. above Choose an item.?	☐ Yes ☐ No
- ENERGY STAR MFHR As-Built Building Reporting Summary Approved?	☐ Yes ☐ No

Actions:	**Complete**
- If either of the questions above is 'no' the ENERGY STAR MFHR Developer partner must be notified of the deficiency and provided with an opportunity to rectify it, if possible (See Notes Section).	
- File copy of Reporting Summary in partner's file	☐

Notes:

ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

As-Built Building Testing and Verification Worksheets-Performance Path

Any items marked as "N" indicate that the submittal does not demonstrate that the measure listed meets the requirements of the ENERGY STAR MFHR Program. More information on each non-compliant measure is available in the notes section below. The Licensed Professional is responsible for making sure that each requirement is met.

	Y	N	N/A	Comments in Excel
1. [ERMs] Data from T&V are consistent with As-Built Performance Path Calculator				
2. [Photo Template] Energy conservation measures are properly documented in the Photo Template and consistent with T&V and PPC (if waived, NA)				
3. [Prerequisites Checklist] Worksheet is complete and indicates no missed measures				
4. [1.1-APPLIANCES] Model numbers were verified on the ENERGY STAR directory and match those shown in the Photo Template				
5. [2.1-DHW] Water heater was verified on the AHRI directory and match model shown in the Photo Template				
6. [2.1-DHW] Showerheads and toilets were verified on the WaterSense directory. Faucet GPM ratings claimed at 80 psi have been confirmed.				
7. [3.1-3.3-ENV] Envelope assembly layers are fully described, consistent with PPC and Photo Template. The U-values reference ASHRAE 90.1 Appendix A Table				
8. [3.4-ENV_WINDOWS] Schedule is complete and consistent with PPC and Photo Template. Assembly U-values are provided.				
9. [4.1-GARAGES] Garages and sidewalks meet all prerequisites				
10. [5.1,5.3-HEATING] Schedule is complete and consistent with PPC and Photo Template. Systems have been verified on the AHRI directory				
11. [5.2,5.4-COOLING] Schedule is complete and consistent with PPC and Photo Template. Systems have been verified on the AHRI directory				
12. [5.1-5.4 HEATING/COOLING] Are apartments properly sampled for duct leakage testing?				
13. [5.1-5.4 HEATING/COOLING] Do all apartments meet duct leakage testing metric?				
14. [6.1-LIGHTING] Installed lighting meets ENERGY STAR requirements for MFHR				
15. [8.1-INF_BLOWER DOOR TEST] Are apartments properly sampled for compartmentalization				
16. [8.1-INF_BLOWER DOOR TEST] Do all apartments meet compartmentalization metric?				
17. [8.2-VENT_SCHEDULE&TAB REPORT] Does the project meet testing requirements for ASHRAE 62.1?				
18. [8.2-VENT_SCHEDULE&TAB REPORT] Does the project meet testing requirements for ASHRAE 62.2 (whole-house & local exhaust)?				
19. [8.2-VENT_DUCT TIGHTNESS] Are ventilation shafts properly sealed and did central exhaust risers meet the ventilation leakage metric?				
20. [9.1-METERS] Metering meets prerequisites				
21. Other				

ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

As-Built Building Testing and Verification Worksheets-Performance Path	
- ENERGY STAR MFHR Testing and Verification Worksheets Approved?	☐ Yes ☐ No
Actions:	**Complete**
- File copy of Testing and Verification Worksheets in the partner's file	☐
Notes: Click here to enter text.	
Reviewed by: Choose an item.	Date: Click here to enter a date.

ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

As-Built Building Testing and Verification Worksheets - Prescriptive Path

Any items marked as "N" indicate that the submittal does not demonstrate that the measure listed meets the requirements of the ENERGY STAR MFHR Program. More information on each non-compliant measure is available in the notes section below. The Licensed Professional is responsible for making sure that each requirement is met.

	Y	N	N/A	Comments in Excel
22. Data from T&V are consistent with As-Built Performance Path Calculator				
23. [Photo Template] Energy conservation measures are properly documented in the Photo Template and consistent with T&V and PPC (if waived, NA)				
24. [Prescriptive Path Checklist] Worksheet is complete, indicates no missed measures				
25. [1.1-APPLIANCES] Model numbers were verified on the ENERGY STAR directory and match those shown in the Photo Template				
26. [2.1-DHW] Water heater was verified on the AHRI directory, matches model shown in the Photo Template, meets minimum efficiency, and is ENERGY STAR certified (where applicable)				
27. [2.1-DHW] Showerheads, lavatory faucets, and toilets were verified on the WaterSense directory and meet additional flow rate requirements.				
28. [3.1-3.3-ENV] Envelope assembly layers are fully described, match Photo Template, and the U-values reference ASHRAE 90.1 Appendix A Table; Window-to-wall Ratio <30%				
29. [3.1-3.3-ENV] Envelope components meet climate zone specific requirements listed in Table 2 and 3 of the ENERGY STAR MFHR Prescriptive Path				
30. [4.1-GARAGES] Garages and sidewalks meet all prescriptive requirements and no space heating systems are specified for pipe freeze protection or comfort.				
31. [5.1,5.3-HEATING] Schedule is complete; models verified on the AHRI directory, match Photo Template and meet efficiencies in Table 1 of the Prescriptive Path				
32. [5.2,5.4-COOLING] Schedule is complete; models verified on the AHRI directory, match Photo Template and meet efficiencies in Table 1 of the Prescriptive Path				
33. [5.1-5.4 HEATING/COOLING] Apartment sample properly identified in duct leakage table and meets metric				
34. [6.1-LIGHTING] In-unit, common area and outdoor lighting requirements meet prescriptive requirements (also see Performance Path Calculator)				
35. [8.1-INF_BLOWER DOOR TEST] Apartment sample properly identified in blower door table and meets metric.				
36. [8.2-VENT_SCHEDULE&TAB REPORT] All supply and exhaust systems identified, including kitchen ventilation that directly vents to the outdoors or to risers and garage fans with CO/NO2 sensors				
37. [8.2-VENT_SCHEDULE&TAB REPORT] Ventilation systems have been properly specified as ENERGY STAR & meet additional Prescriptive Path requirements				
38. [8.2-VENT_SCHEDULE&TAB REPORT] Tested apartment whole-house and local exhaust does not exceed ASHRAE 62.2-2007 rates by more than 50%				
39. [8.2-VENT_SCHEDULE&TAB REPORT] Tested non apartment ventilation does not exceed ASHRAE 62.1-2007 ventilation rates by more than 50%				
40. [8.2-VENT_DUCT TIGHTNESS] Risers identified in ventilation tightness test table and pass ventilation duct leakage metric				
41. [9.1-METERS] Metering meets Prescriptive Path requirements				
42. Other				

ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

As-Built Building Testing and Verification Worksheets - Prescriptive Path	
- ENERGY STAR MFHR Testing and Verification Worksheets Approved?	☐ Yes ☐ No
Actions:	**Complete**
- File copy of Testing and Verification Worksheets in the partner's file	☐
Notes: *Click here to enter text.*	
Reviewed by: Choose an item.	Date: Click here to enter a date.

ENERGY STAR Multifamily High Rise As-Built Submittal Review Form

As-Built Building Performance Path Calculator – Prescriptive Path				
Basic Info	**Y**	**N**	**N/A**	**Comments in Excel**
1. Data is complete in all blue cells				
In-Unit Lighting, Interior Lighting, Exterior Lighting	**Y**	**N**	**N/A**	**Comments in Excel**
2. Data is consistent with values in the T&V Worksheets & Photo Template				
3. In-Unit Lighting: the number of fixtures and rooms is consistent with Basic Info				
4. In-Unit Lighting: instructions have been followed related to lit area and footcandles				
5. Interior Lighting: measurements provided if insufficient footcandles reported				
6. Interior Lighting: all spaces indicate automatic lighting controls				
7. Interior Lighting: if default lumens per watt are not used, cut sheet is provided				
8. Interior Lighting: ballast power has been added for pin-type fixtures				
9. Interior and Exterior Lighting: the 2010 Baseline has been selected & not exceeded				
10. Exterior Lighting: fixture description provided and formulas used for installed Watts				
11. Exterior Lighting: Baseline allowance only calculated for spaces with installed lights				
Statement of Energy Design Intent (if re-submitted)	**Y**	**N**	**N/A**	**Comments in Excel**
12. The SEDI is properly filled out (e.g., includes correct property uses)				
13. The building information on the SEDI is consistent with the information provided in the T&V Worksheets				

- ENERGY STAR MFHR As-Built Performance Path Calculator Approved? ☐ Yes ☐ No

Actions: **Complete**

- If either of the first two questions above is 'no' the ENERGY STAR MFHR Developer partner must be notified of the deficiency and provided with an opportunity to rectify it, if possible (See Notes Section).
- File copy of Performance Path Calculator in partner's file ☐

Notes:

Click here to enter text.

Reviewed by: Choose an item. Date: Click here to enter a date.